

3.1-3.3 Review

Name _____ Date _____ Period _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Write out the first five terms of the sequence.

1) $a_n = n^2 - n$

1) _____

Find the first six terms of the sequence.

2) $a_1 = -5, a_n = 4 \cdot a_{n-1}$

2) _____

Find an explicit rule for the n th term of the arithmetic sequence.

3) $-18, -9, 0, 9, \dots$

3) _____

Find an explicit rule for the n th term of the sequence.

4) $8, 32, 128, 512, \dots$

4) _____

Find a recursive rule for the n th term of the sequence.

5) $4, 5, 6, 7, \dots$

5) _____

Solve.

- 6) A certain species of tree grows an average of 4.7 cm per week. Write an explicit rule for the sequence that represents the weekly height of this tree in centimeters if the measurements begin when the tree is 7 meters tall.

6) _____

Write the series using summation notation.

7) $4 - 16 + 64 - 256 + \dots$

7) _____

8) Find the common difference of the given arithmetic sequence.

$-12, -7, -2, 3, 8$

8) _____

Find the sum of the arithmetic sequence using the formula. Show work!

9) $25, 27, 29, 31, \dots, 43$

9) _____

10) Find the common ratio of the given geometric sequence.

$45, -15, 5, -5/3, 5/9$

10) _____

Find the sum of the geometric sequence using the formula. Show work!

11) $2, -8, 32, -128, 512$

11) _____

Find the sum of the first n terms of the sequence.

12) $19, 26, 33, 40, \dots; n = 11$

12) _____

Determine whether the infinite geometric series converges. If the series converges, determine the limit.

13) $11 + 55 + 275 + 1375 + \dots$

13) _____

14) $48 + 16 + \frac{16}{3} + \frac{16}{9} + \dots$

14) _____

Solve.

15) An auditorium has 30 rows with 10 seats in the first row, 12 in the second row, 14 in the third row, and so forth. How many seats are in the auditorium?

15) _____

Expand the binomial (use your method of choice). Show work!

16) $(x - y)^5$

16) _____

Evaluate.

17) $\binom{11}{9}$

17) _____

18) $\binom{12}{12}$

18) _____

Find the coefficient of the given term in the binomial expansion. Show work!

19) x^3y^{11} term, $(x + y)^{14}$

19) _____

Expand the binomial using the Binomial Theorem. Show work!

20) $(5x + 4)^3$

20) _____